

REMARKS

I. Status of the Claims

Claims 29-43 are currently pending. Claims 44-59 have previously been withdrawn. No claims have been amended by this response.

Applicants thank the Examiner for withdrawing the rejection of claims 29-43 under 35 U.S.C. § 112, ¶ 2. Applicants also thank the Examiner for his indication that claims 32-33 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

II. Rejection Under 35 U.S.C. § 103

The Examiner has maintained the rejection of claims 29-31 and 34-43 under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,194,334 to Aitken et al. ("Aitken") in view of U.S. Patent No. 6,771,414 to Masuda ("Masuda") for the reasons disclosed on pages 2-5 of the Final Office Action. Applicants respectfully traverse this rejection for the reasons of record and for the additional reasons presented below.

A. Lack of Motivation

The Examiner responded to Applicants' position that Aitken does not specifically disclose the composition of the claimed invention by arguing that "although the general family of glasses disclosed does not list Nb, text at col. 4, lines 45-46, as quoted by Applicant, does list Nb in addition to other possible modifying oxides." Final Office Action at 2 (emphasis in original). Thus, according to the Examiner, "no modification of Aitken is needed to achieve the recited *glass composition*." *Id.* (emphasis in original). The Examiner also refers to M.P.E.P. § 2144.05, noting that "where claimed ranges

overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists.” *Id.*

Contrary to the Examiner’s allegations, the mere fact that the ranges may overlap does not necessarily establish a *prima facie* case of obviousness. Applicants respectfully direct the Examiner’s attention to M.P.E.P. § 2144.05 upon which he relies. The M.P.E.P. states that “if the reference’s disclosed range is so broad as to encompass a very large number of possible distinct compositions, this might present a situation analogous to the obviousness of a species when the prior art broadly discloses a genus. M.P.E.P. § 2144.05(I) (citations omitted). M.P.E.P. § 2144.08 provides the guidelines for examining claims directed to a species or subgenus based upon a single reference, which discloses a genus encompassing the claimed species or subgenus but does not expressly disclose the particular claimed species or subgenus. M.P.E.P. § 2144.08(I). Significantly, the M.P.E.P. instructs that the “patentability of a claim to a specific compound or subgenus embraced by a prior art genus should be analyzed no differently than any other claim for purposes of 35 U.S.C. 103.” M.P.E.P. § 2144.08(II).

Here, the Examiner has failed to properly analyze the patentability of the claimed invention for purposes of obviousness. In particular, the Examiner has failed to establish that Aitken would motivate one of skill in the art to make the claimed invention. Aitken discloses a base composition, which is different than the claimed invention and which may be modified with a large number of possible modifying oxides. See Aitken, col. 4:45-46. “The modifying oxides may include 0-30% MO where M is Mg, Ca, Sr, Ba, Zn, Cd, Pb, Y, La, Gd, Lu, Ti, Zr, Hf, Nb, Ta, Bi, H, B and/or P.” *Id.*, col. 4, lines 54-56. The Examiner has not properly explained why one of skill in the art would have been motivated to modify the base composition of Aitken with one of the modifying oxides let

alone select Nb from the possible modifying oxides, assuming, for the sake of argument, that one of skill in the art would have even been motivated to modify the base composition in the first place. See M.P.E.P. § 2144.08(II)(A)(4). The Examiner has certainly not offered any explanation why there would be any reasonable expectation of success to modify with an oxide of Nb in view of the unpredictable nature of the art. Any argument by the Examiner that the size of the modifying oxide genus of Aitken creates a *per se* conclusion of obviousness is again not the proper inquiry; rather, “[s]ome motivation to select the claimed species or subgenus must be taught by the prior art.” M.P.E.P. § 2144.08(II)(A)(4)(a) (citations omitted). The Examiner has failed to establish a basis for a person skilled in the art to make the necessary selections with any reasonable expectation of success. Moreover, the Examiner has not and cannot demonstrate that Masuda cures the deficiencies of Aitken. Specifically, Masuda does not suggest the desirability of choosing Nb from the list of modifying oxides to add to the base composition of Aitken, assuming, for the sake of argument, one was even motivated to modify the composition.

Moreover, Applicants’ specification establishes the criticality of using Nb in an amount greater than 5%. For example, Table 2 shows unexpectedly superior thermal stability results for composition TNW versus TW10, wherein the difference is the presence of 18% of a Nb oxide compound in TNW. Specifically, TW10 merely has a thermal stability index value of 99 versus 175 for TNW. In fact, the TNW composition exceeds the results of any of the compositions with just two oxide compounds of the claims. Similarly unexpected results are reported for TNT versus TN10.

The Examiner then responded to Applicants’ position that there is no suggestion to even combine Aitken with Masuda in the first place by arguing that “the glass of

Aitken, being a type of tellurite glass, would be an obvious candidate to try as the amplifying fiber in the Raman amplifier system of Masuda.” Final Office Action at 3. Applicants agree that Masuda discloses using tellurite glass as the gain medium, but disagree with the Examiner that one of skill in the art would have been motivated to use the specific glass composition of Aitken containing a Nb modifying oxide. Indeed, Masuda merely mentions using a generic tellurite glass, without regard to the amounts used. Masuda, col. 6, lines 1-6. Moreover, Masuda does not even disclose tellurite glasses containing Nb. *Id.* One of skill in the art would certainly not have been motivated by such a disclosure to use the specific base composition of Aitken containing a Nb modifying oxide with Masuda.

Moreover, as mentioned in Applicants’ prior response, the Examiner has failed to demonstrate that one of skill in the art would have been motivated to combine the specific composition of Aitken with a Nb modifying oxide with Masuda because the Examiner has pointed to no evidence that such a modification would “broaden[] the amplifier spectrum.” Final Office Action at 5. In particular, the Examiner has cited no evidence that the addition of Nb or any of the modifying oxides would “broaden[] the amplifier spectrum.” *Id.* In fact, Aitken merely states that the modifying oxides, including Nb, “alter the physical properties” of the base glass compositions and the only optical property that can be different is refractive index. Aitken, col. 4, lines 45-52. Thus, one of ordinary skill in the art would **expect** that modifying the base composition by adding Nb oxide would **not** change the physical properties, including broadening the amplifier spectrum, other than possibly the refractive index.

Accordingly, Applicants respectfully request that the Examiner withdraw this rejection for at least these reasons.

B. Change in the Principle of Operation

The Examiner responded to Applicants' position that modifying the optical fiber of Masuda to use the glass composition of Aitken would not have been obvious to one of ordinary skill in the art because doing so would change the principle of operation of the Raman amplifier of Masuda by destroying the purpose of combining multiple gain spectrums by arguing that "these are an [sic] apparatus claims, not method claims. Principle of operation cannot therefore be the patentable distinction." Final Office Action at 3. Applicants respectfully disagree.

The Examiner's focus on the type of claims present in the instant application is an incorrect and irrelevant inquiry. The correct inquiry is whether the Examiner's proposed modification to the *prior art reference* would change the principle of operation of the *prior art invention* being modified. See M.P.E.P. § 2143.01(VI) (citing *In re Ratti*, 270 F.2d 810 (C.C.P.A. 1959)). For example, in *In re Ratti*, the court found that the combination of references was not a proper basis for rejection because the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the prior art reference] as well as a change in the basic principles under which [that reference's] construction was designed to operate." 270 F.2d at 813; see also *In re Fritch*, 972 F.2d 1260, 1265 n.12 (Fed. Cir. 1992) ("[A] proposed modification [is] inappropriate for an obviousness inquiry when the modification render[s] the prior art reference inoperable for its intended purpose."); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose). Thus, the Examiner must focus on whether the proposed modification of the *prior art reference* would change the principle of operation of that reference.

For the sake of brevity, Applicants incorporate by reference herein in full the arguments they made in their previous response that concerned this aspect of the rejection. In summary, modifying the optical fiber of Masuda to use the glass composition of Aitken would not have been obvious to one of ordinary skill in the art because doing so would change the principle of operation of the Raman amplifier of Masuda by destroying the purpose of combining multiple gain spectrums. Because the proposed modification changes the principle of operation of Masuda, the teachings of Masuda and Aitken are not sufficient to render the claimed invention obvious. See M.P.E.P. § 2143.01(VI). Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

Conclusion


In view of the foregoing remarks, Applicants submit that this claimed invention is not rendered obvious in view of the cited prior art references. Applicants therefore request the Examiner's reconsideration of the application, and the timely allowance of the pending claims. Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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